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INTERNATIONAL SYSTEM OF UNITS

Elemental units

Quantity	*Unit*	*Symbol*	
Length	meter	m	
Mass	kilogram	kg	
Time	second	s	
Electric current	ampere	A	
Temperature	degree Kelvin	°K	
Luminous intensity	candela	cd	

Supplementary Units

Quantity	*Unit*	*Symbol*	
Plane angle	radian	rad	
Solid angle	steradian	sr	

Derived Units

Quantity	*Unit*	*Symbol*	
Area	square meter	m^2	
Volume	cubic meter	m^3	
Frequency	hertz	Hz	(s^{-i})
Density	kilogram per cubic meter	kg/m^3	
Velocity	meter per second	m/s	
Angular velocity	radian per second	rad/s	
Acceleration	meter per second squared	m/s^2	
Angular acceleration	radian per second squared	rad/s^2	
Force	newton	N	($kg \cdot m/s^2$)
Pressure	newton per sq meter	N/m^2	
Kinematic viscosity	sq meter per second	m^2/s	
Dynamic viscosity	newton-second per sq meter	$N \cdot s/m^2$	
Work, energy, quantity of heat	joule	J	($N \cdot m$)
Power	watt	W	(J/s)
Electric charge	coulomb	C	($A \cdot s$)
Voltage, potential difference, electromotive force	volt	V	(W/A)
Electric field strength	volt per meter	V/m	
Electric resistance	ohm	Ω	(V/A)
Electric capacitance	farad	F	($A \cdot s/V$)
Magnetic flux	weber	Wb	($V \cdot s$)
Inductance	henry	H	($V \cdot s/A$)
Magnetic flux density	tesla	T	(Wb/m^2)
Magnetic field strength	ampere per meter	A/m	
Magnetomotive force	ampere	A	
Luminous flux	lumen	lm	($cd \cdot sr$)
Luminance	candela per sq meter	cd/m^2	
Illumination	lux	lx	(lm/m^2)

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LITHO IN U.S.A.

TO FACILITATE the exchange of scientific data, the Bureau has adopted the International System of Units for use by its staff. Henceforth the Bureau will employ this system of units in all its publications except where use of these units would obviously impair communication or would reduce the usefulness of a report to the primary recipients. Standards and measuring devices whose nominal values are in customary U.S. units, like inches, pounds, and gallons, will continue to be calibrated in terms of those units.

The International System of Units (designated SI, for *Systeme International d'Unités*) was defined and given official status in a resolution of the 11th General Conference on Weights and Measures which met in Paris in October 1960.[1] The SI is based on the elemental units. Of these units, those for mass, length, time, and temperature are independent; that is, a definition of one does not depend on definitions of the others. However, the ampere and the candela involve other units in their definitions.

In the International System there is one and only one unit for each quantity, although multiples and submultiples of each unit may be designated by the prefixes approved by the 11th General Conference on Weights and Measures.

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[1] Actions of the 11th General Conference on Weights and Measures, *NBS Tech. News Bull.* **44**, *199 (1960)*.

SI PREFIXES

Multiples and Submultiples	*Prefixes*	*Symbols*	*Pronunciations*
10^{12}	tera	T	tĕr′*ȧ*
10^{9}	giga	G	jĭ′ g*ȧ*
10^{6}	mega	M	mĕg′*ȧ*
10^{3}	kilo	k	kĭl′ŏ
10^{2}	hecto	h	hĕk′tŏ
10	deka	da	dĕk′*ȧ*
10^{-1}	deci	d	dĕs′ĭ
10^{-2}	centi	c	sĕn′tĭ
10^{-3}	milli	m	mĭl ĭ
10^{-6}	micro	μ	mī′ krŏ
10^{-9}	nano	n	năn′ŏ
10^{-12}	pico	p	pē′ cŏ
10^{-15}	femto	f	fĕm′ tŏ
10^{-18}	atto	a	ăt′ tŏ

CONVENIENT AUDIO FREQUENCY UNITS

For measurement and calculation in the audio frequency range the conventional electrical units are often inconvenient. A consistent set of units can be chosen so that the numerical values commonly encountered will be more practical while at the same time the equations used in calculations will not require any troublesome conversion constants. If either set of units listed below is followed consistently, the equations used for calculations will be unaltered. For example, $E = IR$ holds true equally well with E in volts, I in amperes, and R in ohms; or with E in volts, I in milliamperes and R in kilohms.

FUNCTION	CONVENTIONAL UNITS	CONVENIENT AUDIO FREQUENCY UNITS
ω	radian/s = $2\pi f_{Hz}$	kiloradian/s = $2\pi f_{kHz}$
f	hertz	kilohertz
t	second	millisecond
C	farad	microfarad
Z, R and X	ohm	kilohm
L	henry	henry
I	ampere	milliamp
E	volt	volt
P	watt	milliwatt
Q and D	per unit ratio	per unit ratio